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I. Introduction

Good morning, Mr. Chairmen and Members of the Subcommittees.

I am Jay Vroom, President and CEO of CropLife America (CLA), a trade association that represents the developers, manufacturers, formulators and distributors of virtually all crop protection chemicals and crop biotechnology products used by American farmers. I appreciate the opportunity to testify before you today and thank you for your invitation.

CropLife America and our member companies have a critical role in providing fungicide products for use by U.S. soybean farmers and for developing diagnostic and other scientific solutions to help manage Asian soybean rust (ASR).

Just over five months ago, on November 10, 2004, USDA's Animal and Plant Health Inspection Service (APHIS) confirmed the detection of Asian soybean rust in an experimental field in Louisiana, the first time that this disease had been detected in the United States.

It is important to note, however, that planning by the industry, government and growers and work to combat this disease began several years before that. In anticipation that the disease might eventually reach the U.S., CropLife America and its member companies have worked to develop a variety of crop protection fungicide products, and we have worked closely with the states to seek additional fungicides under FIFRA Section 18 for use by growers as emergency crop protection tools. Manufacturers are doing all they can in the face of uncertain conditions to predict the market needs and provide products for domestic use.

As the American Soybean Association (ASA) has said, "This is the first time in U.S. history that EPA has granted prior approval of products needed for emergency treatment of a plant disease before that disease was confirmed in the United States. This unprecedented level of preparedness would not have been possible without the tireless efforts of the ASA, CropLife America, and the EPA."

At the outset of my testimony, I would like to commend the USDA and EPA for their efforts to help American agriculture meet the challenges it faces with Asian soybean rust. We recognize this is an unprecedented situation with potentially serious consequences if timely actions and effective coordination are not achieved by the government, industry, growers and other stakeholders.

CropLife America and its members look forward to continuing our ongoing cooperation with the USDA, EPA, the American Soybean Association, State Departments of Agriculture, the National Association of Independent Crop Consultants and other stakeholders to effectively manage this disease. We also stand ready and willing to work with the Congress, and specifically members of this committee, to meet the needs of your constituents.

While recognizing that there is a certain amount of anxiety among soybean growers since the arrival of this new disease in the United States, I would like to (1) emphasize the importance of keeping lines of communication open, (2) outline the effectiveness of fungicides in treating Asian soybean rust, (3) detail the current toolbox of fungicides available to growers, and (4) summarize some important actions taken by CropLife America and our membership to respond to the needs of American agriculture.

II. The Fungicide Segment of the U.S. Crop Protection Industry

It may be helpful for subcommittee members to first have an overview of the fungicide segment of the crop protection industry and where fungicides are currently applied in the United States.

The United States fungicide market is valued at approximately $700 million, or just under ten percent of the total U.S. pesticide market. Of the total quantity sold domestically, $500 million in fungicide products are applied to agricultural crops while the remaining fungicides are employed in the non-crop market, primarily on turf.

In the U.S., agricultural fungicides are primarily used on fruits and vegetables and are applied to cure and protect plants from fungal and bacterial pathogens. American farmers rely on the use of 50 different chemical active ingredients as fungicides to control over 225 different disease pathogens that attack crops each year. Additionally, over 80 percent of the acreage of most horticultural crops is treated with fungicides. According to the EPA, approximately 73 million lbs. of synthetic fungicide active ingredients are applied annually, which is about six percent of the volume of pesticides applied in the United States.

Examples of fungicide use by growers include potato production where farmers have doubled the volume of fungicides used to grow their crops in the 1990s. The crop protection industry met this increased demand to supply potato growers with fungicide tools and helped them to protect their yields. Without fungicide applications, estimates

show that U.S. potato production would be reduced by 43 percent annually, which represents 18 billion pounds of rotted potatoes. Fungicides have increasingly been used to control fungal diseases introduced into western U.S. states. Due to new disease organisms arriving in the 1980s and 1990s, fungicide use dramatically increased in almonds, pistachios, garlic, artichokes, hops and hazelnut crops.

Internationally, fungicide usage by growers has increased significantly, especially after the appearance of Asian soybean rust in Brazil and that country's adoption of fungicides for its control. Since initial South America detections of Asian soybean rust in 2001, the Brazilian fungicide market has climbed from approximately $100 million to nearly $700 million in 2004. Throughout this period, Brazil continued to increase its soybean acreage and national production. This was made possible through the use of fungicides which proved very effective in controlling soybean rust.

The Crop Protection Research Institute, a research arm of CLA's Foundation, will soon release a major study that analyzes the use of all fungicides in U.S. crop production. Upon completion in June 2005, the study will outline the value of increased crop production due to the application of fungicides. Twenty-three commodity organizations have reviewed and endorsed the study thus far. I would be pleased to share this report with members of this committee.

III. The Crop Protection Industry's Preparations for the Arrival of Asian Soybean Rust

While the arrival of an exotic crop disease in the United States is never welcome news, the good news is the discovery occurred before the planting season and has allowed the industry time to work with farm organizations and federal officials to ensure that crop protection products and information are available to growers, retailers, professional applicators and others on the front lines in combating Asian soybean rust.

In anticipation that the disease would eventually reach the United States, CropLife America first began planning for the arrival of soybean rust in May 2002, hosting a meeting of grower organizations, industry representatives and government experts. Our member companies have worked hard for years to develop a variety of crop protection fungicide products.

In addition to routinely working with EPA's Office of Pesticide Programs (OPP) on fungicide registrations and Section 18 requests by various states for emergency exemptions, CropLife America has participated with USDA's Technical Science Working Group on Soybean Rust along with a wide variety of stakeholders including university scientists, state departments of agriculture representatives, federal regulatory officials, commodity group representatives, and independent crop consultants. We are also participating in a second USDA work group formed to develop quarantine exemptions and plans for the potential impacts of soybean rust on specialty legume crops.

CropLife America and its members have worked to coordinate and consult with a number of USDA's agencies including the Animal and Plant Health Inspection Service, the Agricultural Research Service, the Agricultural Marketing Service, the Cooperative State Research, Education and Extension Service, the Economic Research Service, the Foreign Agricultural Service, the Risk Management Agency as well as state extension service personnel in their efforts to combat ASR. This work has included helping to develop sampling protocols for fungicide-treated soybeans, working on MRLs for export markets, mapping rust-resistant soybean genes as well as sharing efficacy and resistance data on fungicides. For example, at the request of USDA's Foreign Agriculture Service, we hosted a meeting on February 11, 2005 to work on issues of international MRLs for newly approved treatments to combat rust and to help protect overseas markets for soybean producers.

Our member companies that manufacture and distribute fungicides have generously shared their expertise in combating soybean rust in Latin America and Africa with plant scientists, federal regulators and U.S. soybean growers. This experience is significant, since these companies have several years of efficacy data and experience in refining application rates and methods that can be adapted to address circumstances in the U.S. Several companies have transferred personnel with experience dealing with soybean rust from their South American posts to the United States to provide some additional reinforcements and expertise for U.S. soybean growers.

We have met with numerous agricultural stakeholders to discuss a multitude of soybean rust issues and also enhance coordination and communication within the agricultural community. These organizations include the American Soybean Association, United Soybean Board, North American Grain Export Association, National Association of Independent Crop Consultants, the American Farm Bureau Federation, the American Phytopathological Society, the National Oilseed Processors Association, the National Agricultural Aviation Association, the Agricultural Retailers Association, the North American Grain Congress, the National Association of State Departments of Agriculture and the National Association of Farm Broadcasters.

We believe that collectively we all have a stake in working to minimize the potential damage from Asian soybean rust. Towards this end, CropLife America is collaborating with dealers and distributor organizations to help ensure their grower customers receive information about fungicides and also communicate field data back to manufacturers during the 2005 season.

We are keenly aware that ASR is a relatively new disease outside of Asia and discovered in the U.S. just five months ago. Additional information is becoming rapidly available. However, because of a variety of circumstances, this new challenge will require constant communication and coordination within the agricultural community. To quote Mississippi State plant pathologist emeritus, Billy Moore, "The main thing farmers need to know about the disease is there is no reason to panic. But there is need to plan."

Interestingly, when USDA recently surveyed producers about their awareness of Asian soybean rust, among farmers intending to plant soybeans the awareness was 89 percent. This group had heard, read or seen information on Asian rust, while among all producers surveyed only 43 percent indicated they had heard about the disease. Only six percent of producers indicated that soybean rust was a factor in their soybean planting decisions, and of this group seven percent told USDA they were increasing their acreage, while only three percent indicated that they intended to decrease their plantings. Farmers in the Mississippi River Delta states and the Southeast were most heavily influenced by the disease in their decision making. Farmers growing less than 100 acres of soybeans were least exposed to information about the disease, according to the Prospective Plantings Report released in March by USDA's National Agricultural Statistics Service.

To ensure adequate communication with agricultural stakeholders, CLA and many of our member companies have ramped up the industry's outreach efforts by participating in numerous agricultural industry meetings, trade shows, web-based seminars and trade press interviews in recent months. Our members have also launched communications outreach campaigns to reach dealers, applicators and growers and update them about fungicide products, efficacy, application technologies, resistance management and other issues. Fungicide companies have also established soybean rust web sites and launched paid advertising campaigns to the grower community.

IV. Benefits of Fungicide Products and Best Management Practices to Control ASR

A fungicide is a specific type of pesticide that controls fungal diseases by specifically inhibiting or killing the fungus in the plant. Fungicide treatments to manage Asian soybean rust have proven very effective in other countries. However, to be effective, most fungicides need to be applied before infestation occurs or at the first appearance of symptoms.

Given the nature of Asian soybean rust, which is spread long distances, even intercontinental distances, by wind, there is nothing any of us could do to prevent its ultimate arrival in North America. We were probably successful in delaying its arrival through strict phytosanitary measures, but the day of reckoning has come. USDA-ARS plant pathologists say the odds for an epidemic of Asian soybean rust this year depends on the infestation level, winter spore survival along the Gulf Coast and weather conditions.

Rust was found in November and December 2004 scattered over nine states, but there were few soybeans left in the field at that time. Still, USDA's Soybean Research Center in Illinois predicts that ASR will be present in the southeastern United States most years from now on. The further north and west you go, the chances for rust infestations decrease, but ASR will be present in most soybean production areas at least 50 percent of the time, according to the USDA.

As you've heard today, soybean rust dispersal is highly dependent on environmental conditions. Once the pathogen is present, abundant spore production occurs during wet leaf periods and moderate temperatures (60 to 80 degrees F). The disease can spread quickly within a field, according to plant scientists with experience in South America. However, U.S. conditions - in the Midwest for example - are not akin to those in Mato Grosso, Brazil and regions in Africa where soybean rust has spread.

Long-distance dispersal is dependent on wind patterns and weather conditions, and is the subject of current research and close monitoring by the USDA, CropLife America member companies, extension service personnel and growers. We applaud the USDA for setting up its soybean rust monitoring framework for reporting where rust has been confirmed and is likely to spread during the 2005 season. In addition to monitoring efforts by the government and growers, CropLife America members have in place their own tracking programs, including internet-based systems, which are designed to be early warning systems. Fungicide manufacturers have indicated that they are prepared to move products quickly into affected areas, sometimes within 24 hours of detection.

USDA's Economic Research Service estimates yields in soybeans treated with fungicides will average just four percent lower than rust-free yields. Assuming that there are no control efforts and fungicide applications are not applied, yield loss can be significant. Soybean yield losses caused by ASR of up to 80 percent have been reported in other parts of the world. Losses of 50 percent are not uncommon during severe outbreaks if crops are not effectively treated with fungicides. Although data on fungicide efficacy for rust control in the U.S. are currently limited because it has not yet affected crops, there is valuable information gathered from the African and South American experiences about fungicides and their effectiveness in controlling soybean rust. Still, this is a new disease and circumstance with unique conditions for domestic growers.

In parts of many southern U.S. soybean-producing states, growers already routinely use fungicides on soybeans to control foliage diseases other than soybean rust, and nearly 1.5 million acres of soybeans were treated with fungicides commercially in 2004. As a result, U.S. growers are seeing what producers in Brazil experienced – the potential for yield increases - as they worked to control the pre-soybean rust fungal threats of frogeye leaf spot, aerial web blight, brown leaf spot and other diseases. Observations by fungicide manufacturers in Brazil, as well as field-trial data with U.S. growers in 2002 and 2003 show an increase in yields – a 7-bushel per acre response on average – with the application of fungicides to treat these combined diseases.

Soybean rust resistant plant varieties are not available to growers at this time, and their development is part of ongoing scientific research and remains a long-term goal. CropLife America and its member companies are extensively involved with scientific efforts to generate a better understanding of soybean diseases and enhance breeding and biotechnology efforts to develop rust-resistant genes. One member company, for instance, has entered into a collaborative agreement with USDA's Agricultural Research Service and the University of Illinois to map the locations of rust-resistant soybean genes. This public-private sector partnership is expected to develop information for plant

breeders about rust-resistant genes by identifying genetic markers within the soybean genome.

In the interim, research and the crop protection industry's experience with rust in South America and Africa demonstrates that a proper fungicide treatment regime results in yields comparable to uninfected plots, even in heavily infected areas. Brazil is the second leading soybean producer next to the U.S. and its exports of soybeans to its key markets have not been affected by ASR, indicating that fungicide treatments have been effective, according to the USDA and other observers. This information will be supplemented by what we learn from actual experience in the U.S. over the next few years.

Generally speaking, fungicides can be categorized as either preventative or curative. Preventative treatments are most effective when applied before an infection has occurred. Curative fungicides are effective as a first application when rust symptoms are visible. However, none of these fungicides can cure advanced lesions in a leaf – underscoring the critical importance of monitoring by growers, the USDA and others to ensure the timely applications of fungicides. Frequency of treatment will depend on the level of infection at the initial application of fungicides. Therefore, to manage the disease, early applications are critical. Simply put, early detection is required for effective management of the disease with fungicide products.

Monitoring environmental conditions and scouting the crop for signs of disease increase will help indicate whether a second or third spray is needed. Typically one to three and occasionally four applications are needed to control the disease, according to plant scientists and USDA officials who have estimated an average treatment cost of $25 per acre for two fungicide treatments. Other estimates have put approximate fungicide costs in the area of $45 dollars for three applications. Actual economics have yet to be formulated, however, since the number of applications, types of fungicides, rates, adjuvant and application costs have yet to be determined in the U.S.

Growers should carefully follow all label directions on individual products. Fungicide manufacturers are supplying information about spraying and proper procedures for effective coverage such as spray volume, pressure, ground speed, placement, application timing and coverage. However, it is important to emphasize that just applying fungicide to a rust-infected field will not be enough to control the pathogen.

Multiple applications of the fully registered fungicide products are allowed. A maximum of three applications per season of Section 18 products is allowed, with no more than two applications of any one fungicide active ingredient from among those products.

Fungicide manufacturers, dealers and distributors will be working closely with all stakeholders during the current growing season. But, it is important to stress that growers be well informed about the available options and have a management plan in place should rust arrive in their area. CropLife America suggests that decisions about what types of fungicides to apply are best discussed with the local expertise of retail dealers, extension agents or crop consultants. Treatment decisions must be based on closely monitoring the

spread of the disease, detection in local fields, weather conditions and other factors. Our understanding is that local extension services, State Departments of Agriculture and other crop consultants will offer fungicide management plans to growers as the 2005 season progresses.

While not a drop of fungicide has been sprayed in the U.S. on soybean crops this season, our industry has received multiple questions about the efficacy of fungicides to manage soybean rust. The potential for resistance development is an important question addressed by the manufacturer in deciding whether and how to develop any new product, including fungicides, insecticides and herbicides. Information and research to improve the efficacy of fungicides is an important and ongoing part of product development with CropLife America's members.

However, it is important to reiterate that ASR has been a problem in Brazil and elsewhere around the globe for some time and has been effectively managed with fungicides. This experience has given the scientific community important insights into managing fungicide use to manage resistance development to ASR. Certainly, one of the best ways to prevent resistance development is to have a variety of products, approaches and classes of chemistry to attack the problem, which is another reason why we are working closely with the EPA to ensure that approvals are granted promptly and a full toolbox of fungicide products is available to growers.

V. Fungicides Available to Treat Asian Soybean Rust

Fungi are the number one cause of crop losses worldwide. Because fungicide treatments have proven effective in managing Asian soybean rust in other countries and currently provide the only option for U.S. soybean growers to contain rust, it is critical that growers have an adequate array of fungicides.

CropLife America, the crop protection industry, EPA, USDA, state departments of agriculture, the American Soybean Association and others have worked hard in recent months to ensure that these products are approved for use by soybean growers. This level of preparedness has produced results and the list of approved fungicides for soybean rust control has expanded significantly.

Prior to the discovery of ASR in Louisiana last November, there were only two fungicides approved for use on soybeans to combat Asian rust in the United States. As of mid-December, there were eight chemicals approved with at least 12 different fungicide products available for farmers to buy. Today, nine active ingredients manufactured by ten companies are formulated individually or in combination into 18 different fungicide products that are available to U.S soybean growers. These nine fungicide active ingredients from four chemical classes: triazoles, strobilurins, chloronitriles and carboxamides, are currently available for management of soybean rust in the U.S.

Currently, some fungicide products have Section 3 registrations for use on soybeans, while others have emergency exemptions for limited use under FIFRA Section 18 while their registrations are pending. Of the 18 products currently approved, eight have Section 3 registrations and can be used by growers in any state. The remaining ten rust control products have Section 18 approval for use in 30 soybean producing states. Not all ten products are currently approved for use in all of these states; however EPA's review of additional Section 18 requests is underway.

Currently some Section 18 fungicides are pending, along with refinements to approved Section 18 labels. Nine products, containing a total of six new active ingredients plus two already approved active ingredients, are the subject of a Section 18 application which was submitted by the States of Minnesota and South Dakota in March 2005. CropLife America believes that EPA's review of these requests can move expeditiously by taking advantage of risk assessment work that has already been completed to ensure that timely decisions are made in its approval process.

VI. Market Supply and Distribution Issues

To determine demand and distribution decisions, each manufacturer is doing all it can, in the face of uncertain conditions, to predict the market needs and provide products for domestic use. These decisions will require careful consultations by individual companies with a variety of government experts and stakeholders such as dealers, distributors, meteorologists, plant pathologists, extension agents, growers and others to ensure the availability and timely distribution of products.

Several factors will help facilitate this process and enable the markets to meet demand. For example, soybean planting seasons are a bit different across U.S. soybean production regions. Southern soybean farmers, distributors and suppliers may be busy while Midwestern farmers, distributors and suppliers may not. The difference in seasons allows manufacturers, distributors and applicators to help each other manage this challenge. Wind patterns and climatic conditions will also be key factors in determining where and to what extent ASR affects U.S. crops during this season and requires manufacturers and distributors to respond to these market needs.

As a not-for-profit trade association, CropLife America takes anti-trust laws very seriously and is prohibited from discussing or addressing issues of inventory, price, distribution and market segmentation. While can't comment about these issues specifically, let me say that CropLife America believes the marketplace works effectively and our membership has extensive experience working with a highly sophisticated chemical distribution system.

We know that whatever we can do to manage an outbreak of Asian soybean rust and protect crop yields will benefit U.S. growers, consumers and industry alike. I can assure you that our members are well aware of the situation and I believe they will be fully responsive to the needs of their customers. Of course, each company will continue to

make independent decisions about production consistent with anti-trust laws. But they all have a strong incentive to meet this demand by soybean growers for fungicide products.

Overall costs to manufacturers for the discovery and development of a new pesticide currently average about $184 million. The data, which take many years to develop, undergo rigorous scientific scrutiny by EPA experts. Only upon completion of this extensive research and review process will EPA register the product for use. On average, the screening of 139,000 compounds yields just one commercial product. In the year 2000, the entire process from initial discovery to commercialization took over nine years.

Thanks to the leadership of Congress in passing the Pesticide Registration Improvement Act (PRIA) in 2004, the predictability and speed of the approval process for new fungicide products that are in the pipeline may be improved. EPA's efforts to meet decision timelines under PRIA during this first year of implementation are encouraging. However, the Administration proposals to reinstate old registration and tolerance fees in the President's FY 2006 Federal Budget threaten to undermine these potential improvements which were passed by Congress just last year. CropLife America strongly urges Members to oppose the reinstatement of these fees.

Although it is difficult for us to predict what the next generation of fungicides for rust control will be and when they will come to market, we can assure you that CropLife America's members are working to ensure that any new products in the pipeline are available to growers as quickly as possible. On an ongoing basis, crop protection companies, university researchers and the soybean industry are aggressively searching for additional efficacious fungicides and formulations, as well as application rates and methods to combat rust.

VII. Establishing Tolerance Levels for Soybean Export Markets

Market analysts and USDA economists have suggested that the discovery of ASR in the United States is not likely to have an impact on U.S. soybean exports because nearly every major soybean producing country in the world also is infected by Asian soybean rust. However, with half of all U.S. soybeans destined for overseas markets and an export value of approximately $9 billion annually, CropLife America believes that timely government action by the EPA is necessary to establish the tolerances for residues in soybeans treated with fungicides.

Along with the American Soybean Association and the American Farm Bureau Federation, we are urging that adequate EPA resources be made available to establish tolerance levels for fungicide products approved for use on soybeans prior to the harvest season. We are also joining with farm organizations to urge the government to formally notify major soybean export customers of these U.S. tolerances through the World Trade Organization notification process.

VIII. Recommendations from CropLife America

CropLife America would like to emphasize the importance of all stakeholders, both public and private, ensuring that lines of communication remain open as the soybean growing season progresses.

Greater transparency about Section 18 approval timeframes and communications outreach efforts by EPA should also be considered to reduce uncertainty and speculation within the stakeholder community since registrants are legally restricted under FIFRA from advertising products to combat soybean rust while awaiting Section 18 or Section 3 approval. This limits the information available to extension agents, crop consultants, distributors, applicators and growers about the options for control of the disease.

We also believe that review by the EPA of additional state requests for Section 18 emergency exemptions should consider taking advantage of risk assessment work that has already been completed to ensure that timely decisions are made.

Finally, because plant scientists cannot precisely predict the extent of any outbreaks of ASR this year, CropLife America believes it is critical to provide an adequate array of fungicide products for growers and ensure that government resources are allocated to facilitate fungicide approvals and establish the corresponding tolerances.

IX. Conclusion

Asian soybean rust is a new disease in the United States with a wide array of possible outcomes, so it is impossible for stakeholders to have absolute answers. This is a new challenge for American agriculture and experts believe that ASR may not behave the same in North and South America due to differences in U.S. weather patterns, soybean development, acreage, genetics, growing season, host distribution, and other factors.

Nonetheless, a large amount of work has already been completed to prepare for the arrival of Asian soybean rust on U.S. soil. Additional information, as well as new tools and technologies to combat rust, are rapidly becoming available. Fungicide manufacturers are adapting successful ASR management strategies from other areas of the world to effectively manage the disease in the U.S.

CropLife America and its membership are actively coordinating and communicating with public and private stakeholders. We look forward to providing effective plant science solutions and products for use by U.S. soybean producers during this and future growing seasons.

Certainly one thing that was accomplished this morning by Chairman Moran, Chairman Lucas and Members of the subcommittees is to send a clear message to all stakeholders in the agricultural community – including the crop protection industry – that suppliers of agricultural inputs have a responsibility that we must take seriously.

CropLife America will take Congress' message from today's hearing and encourage our members to continue their work to ensure that sufficient fungicide products are produced, distributed and made available where needed. While it is important to understand that individual companies will make their own commercial decisions, CropLife America will make sure that your message is communicated to our members.

Mr. Chairmen, we look forward to working with you and the other subcommittee members in the coming months.

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